

REMARKS

The foregoing Amendment is filed in response to the official action dated September 19, 2008. Reconsideration is respectfully requested.

The status of the claims is as follows.

Claims 1-25 are currently pending.

Claims 1-25 stand rejected.

Claims 1-5, 8-11, 13-14, 19-23, and 25 have been amended.

Claims 7 and 24 have been canceled without prejudice.

Claims 26-27 have been added.

The Examiner has rejected claims 1, 3-6, and 15-25 under 35 U.S.C. 102(e) as being anticipated by Spencer et al. (USP 7,224,808). The Applicant respectfully submits, however, that base claims 1, 20, and 23, as amended, and the claims depending directly or ultimately therefrom, recite non-obvious subject matter that distinguishes over the art of record, and therefore the rejections of claims 1, 3-6, and 15-25 under 35 U.S.C. 102 should be withdrawn.

For example, amended base claim 1 recites the following:

"A system using the nonlinearity of a propagation medium to demodulate ultrasonic waves having an audio signal modulated onto the ultrasonic frequency, comprising:

audio signal processing circuitry including:

delay means for the audio signal providing a delayed audio signal;

envelope generator means providing an envelope signal which is responsive to negative peaks of the audio signal over a predetermined interval; and

combiner means for the delayed audio signal and the envelope signal, the resulting combined signal being useful in processing for modulation of said ultrasonic frequency; and

premodulation processing means for processing the combined signal including the delayed audio signal and the envelope signal, thereby allowing the propagation medium demodulation to provide a demodulated acoustic signal which is a substantially accurate representation of the audio signal." (emphasis added)

As indicated above, amended base claim 1 recites envelope generator means "providing an envelope signal which is responsive to negative peaks of the audio signal over a predetermined interval". The Applicant respectfully submits that the Spencer reference fails to teach at least this element of amended claim 1. For example, the Spencer reference discloses a method for improving performance of a parametric speaker system that includes providing a delay of an audio signal, limiting the growth rate of a carrier envelope to about 70% of a first target value over the time period of the delay, and limiting a rate of decay of the carrier envelope based on a second target value of the audio signal, in which the first target value can be a peak amplitude value of the audio signal and the second target value is a minimum

amplitude value of the audio signal (see column 2, lines 5-37, of the Spencer reference). The Applicant respectfully points out, however, that the "carrier envelope" of the Spencer reference does not correspond to the "envelope signal" of amended claim 1.

For example, as described in the present application, the claimed invention "uses an envelope summed with the audio signal and an envelope detector to supply an adjusting offset to the source audio signal, such that the envelope of the audio signal, when added to the audio signal, is entirely positive (or entirely negative)" (see page 2, lines 4-7, of the application). Further, because "we are primarily concerned with keeping  $x[n]$  positive, we need only concern ourselves with tracking the negative peaks of  $x[n]$ " (see page 6, lines 25-26, of the application). Although, as discussed above, the Spencer reference discloses limiting the growth rate and the rate of decay of the carrier envelope based on first and second target values, respectively, the Spencer reference is silent with regard to the generation of an envelope signal responsive to negative peaks of an audio signal that, when combined with the delayed audio signal and subsequently processed pre-modulation, allows the propagation medium demodulation to provide a demodulated acoustic signal which is a substantially

accurate representation of the audio signal, as recited in amended base claim 1.

Because the Spencer reference fails to teach or suggest at least "envelope generator means providing an envelope signal which is responsive to negative peaks of the audio signal over a predetermined interval", as recited in amended base claim 1, the Applicant respectfully submits that the Spencer reference does not anticipate amended claim 1 and the claims depending directly or ultimately therefrom. For at least the reasons discussed above with regard to amended claim 1, the Applicant further submits that the Spencer reference does not anticipate amended base claims 20 and 23, and the claims depending directly or ultimately therefrom. Accordingly, it is respectfully submitted that the rejections of claims 1, 3-6, and 15-25 under 35 U.S.C. 102 should be withdrawn.

The Examiner has rejected dependent claims 2 and 7-14 under 35 U.S.C. 103(a) as being unpatentable over the Spencer reference in view of Croft III *et al.* (USP 6,584,205). The Applicant respectfully submits, however, that the Croft reference does not remedy the deficiencies of the Spencer reference.

For example, the Croft reference appears to contemplate only systems in which an envelope, specifically, a calculated envelope of a modulated signal, is manipulated post-modulation (see column

5, lines 26-39, of the Croft reference). Like the Spencer reference, the Croft reference is silent with regard to the generation of an envelope signal responsive to the negative peaks of the audio signal that, when combined with the delayed audio signal and subsequently processed pre-modulation, allows the propagation medium demodulation to provide a demodulated acoustic signal which is a substantially accurate representation of the audio signal, as recited in amended base claim 1. The Applicant further submits that the Croft reference is silent with regard to the system of amended dependent claim 13, in which, "in response to the negative peaks of the audio signal, said premodulation processing means provides for dynamic polarity reversal of the combined, processed signal prior to modulation at one or more specified times within a predetermined interval, thereby reducing bandwidth of the modulated ultrasonic frequency" (see also new dependent claims 26-27).

Because the Croft reference does not remedy the deficiencies of the Spencer reference, the Applicant respectfully submits that the combined teachings of the Spencer and Croft references would not suggest to one of ordinary skill in this art at the time of the invention the subject matter of dependent claims 2 and 7-14.

Accordingly, it is respectfully submitted that the rejections of claims 2 and 7-14 under 35 U.S.C. 103 should be withdrawn.

In view of the foregoing, it is respectfully submitted that the present application is in a condition for allowance. Early and favorable action is respectfully requested.

The Examiner is encouraged to telephone the undersigned Attorney to discuss any matter that would expedite allowance of the present application.

Respectfully submitted,

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